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J. L. Wilson
Vice President, Sequoyah Nuclear Plant

September 30, 1992

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

TENNESSEE VALLEY AUTHORITY - SEQUOYAH NUCLEAR PLANT UNIT 1 - DOCKET NO. 50-327 - FACILITY OPERATING LICENSE DPR-77 - LICENSEE EVENT REPORT (LER) 50-327/92017

The enclosed LER provides details concerning an engineered safety feature (ESF) actuation as the result of an inadvertent auto start signal from the 1B-B centrifugal charging pump undervoltage auxiliary relay. This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv) as an automatic actuation of an ESF.

Sincerely,

J. L. Wilson

Enclosure
cc: See page 2

IE22
1/1

cc (Enclosure):
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NRC Form 366 (6-89) | U.S. NUCLEAR REGULATORY COMMISSION | Approved OMB No. 3150-0104 Expires 4/30/92

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Sequoyah Nuclear Plant, Unit 1	0 5 0 0 0 3 2 7	1 OF 0 4

TITLE (4) Inadvertent Auto Start Signal to the 1B-B Centrifugal Charging Pump

EVENT DAY (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 8	3 1	9 2	9 2	0 1 7	0 0	0 9	3 0	9 2		0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	XX 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (AREA CODE)
C. D. McDuffy, Compliance Licensing	6 1 5 8 4 3 - 7 7 6 6

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE)	NO				
			0 7	0 2	9 3

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At 1016 Eastern daylight time on August 31, 1992, with Unit 1 at 100 percent power, an engineered safety feature (ESF) actuation resulted from an auto start signal to the 1B-B centrifugal charging pump (CCP). The auto start signal was initiated when the charging pump undervoltage auxiliary relay latching mechanism unlatched. The 1B-B CCP was already in service at the time of the event; therefore, no pump start actually occurred. A labelling activity to identify relays in the 6.9 kilovolt shutdown board logic cabinets was ongoing at the time of the relay actuation. The apparent cause of this event was determined to be a latch of a seismically-qualified ESF relay not being fully secured resulting in unlatching due to vibrations induced by the labelling activity. A work request will be performed to determine the root cause of the relay operation.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Sequoyah Nuclear Plant, Unit 1	0 5 0 0 0 3 2 7	9 2	-- 0 1 7	-- 0 0	0 2 OF 0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

I. PLANT CONDITIONS

Unit 1 was operating at 100 percent power.

II. DESCRIPTION OF EVENT

A. Event

On August 31, 1992, at 1016 Eastern daylight time (EDT), the unit experienced an engineered safety feature (ESF) actuation (EIIS Code JE). The ESF actuation occurred when an auto start signal from the 1B-B centrifugal charging pump (CCP) (EIIS Code CB/BQ) undervoltage auxiliary relay (EIIS Code JE) was inadvertently actuated. The auto start signal was initiated when the undervoltage auxiliary relay latching mechanism unlatched. The 1B-B CCP was already operating and therefore no actual pump start occurred.

B. Inoperable Structures, Components, or Systems

None.

C. Dates and Approximate Times of Major Occurrences

1. August 30, 1992 — Operations began replacing the temporary tape labels for the relays in the 6.9 kilovolt (kV) shutdown board logic cabinet with permanent labels.

2. August 31, 1992 at 0930 EDT — The shift technical adviser (STA) requested the Unit 1 support assistant shift operations supervisor (ASOS) to perform a second-party verification of the labels.

3. August 31, 1992 at 1016 EDT — Both the STA and the support ASOS were standing by panel No. 4 of the 1B-B 6.9 kV logic panel. While scraping the temporary tape labels from the panels, the STA and ASOS had discussed the small space between the relays and how close the STA's hands and scraper were to them. During the scraping of the labels, an annunciation was received in the Unit 1 control room from actuation of the 6.9 kV shutdown board 1B-B CCP blackout relay.

4. August 31, 1992 at 1114 EDT — After reviewing electrical schematics, Operations determined that the CCP was not inoperable and that it was safe to reset the undervoltage auxiliary relay.

5. August 31, 1992 at 1316 EDT — NRC was notified of the ESF actuation.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Sequoyah Nuclear Plant, Unit 1	0 5 0 0 0 3 2 7	9 2	-- 0 1 7	-- 0 0	0 3 OF 0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

D. Other Systems or Secondary Functions Affected

None.

E. Method of Discovery

The relay actuation caused an annunciation, "6.9 kV Shutdown Board Logic Panel 1B-B Load Stripping Relay Out of Sync," in the control room.

F. Operator Actions

Operations reviewed the "annunciator response" procedure, the electrical schematics, and determined that the CCP was not inoperable and that it was safe to reset the relay. The relay was reset.

G. Safety System Response

Safety systems performed their intended functions.

III. CAUSE OF EVENT

A. Immediate Cause

The auto start signal to the 1B-B CCP was initiated when the CCP undervoltage auxiliary relay latching mechanism unlatched.

B. Root Cause

The apparent cause of this event was concluded to be a less than fully secured latch of a seismically-qualified ESF relay. The vibrations that were induced while scraping off the labels apparently caused the unlatching of the relay and initiated the ESF signal.

After performing a work request (WR) to determine the relay's sensitivity and the cause for unlatching, the root cause will be determined.

IV. ANALYSIS OF EVENT

The undervoltage auxiliary relays are designed to block normal auto start sequencers and require the auto starts to occur after a designed time delay. The relay operates to place time-delay relays in service in the event of a station blackout. The relay places a two-second timer in the start circuit of the CCP when the voltage returns to the shutdown board. The inadvertent operation of this relay without a blackout caused the running 1B-B CCP to receive an ESF start signal and would prevent it from stopping without going to "pull to lock" with the hand switch. No additional actuations occurred. Therefore, there was no adverse impact on the health and safety of the public or plant personnel.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Sequoyah Nuclear Plant, Unit 1	0 5 0 0 0 3 2 7	9 2	-- 0 1 7	-- 0 0	0 4 OF 0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

V. CTIVE ACTIONS

mediate Corrective Action

Operations evaluated the consequences of the relay operation, reviewed electrical schematics, and determined that the CCP was not inoperable and that it was safe to reset the undervoltage auxiliary relay. In addition, Operations conducted a test in an attempt to unlatch a relay by jarring. Utilizing two spare relays, the test indicated that even high-impact jarring will not disengage a securely-latched mechanism.

B. Corrective Actions to Prevent Recurrence

1. A WR was written to examine the relay in place to determine its sensitivity and the cause for unlatching. This WR will be performed during the Unit 1 Cycle 6 (U1C6) refueling outage.

2. Actions to prevent recurrence will be determined when the WR is complete and the actual root cause has been determined.

VI. PREVIOUS SIMILAR EVENTS

A review of the LER database identified no previous or similar events that would have prevented this event from occurring.

VII. COMMITMENTS

1. TVA has submitted a WR to determine the actual root cause. The WR is expected to be completed by June 1, 1993 (during the U1C6 refueling outage).

2. Based on the findings of the WR, TVA expects to submit a revision to this LER by July 2, 1993.